

material shall be submitted to the Commandant for consideration.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9979, June 17, 1970; CGD 72-104R, 37 FR 14234, July 18, 1972; CGD 73-254, 40 FR 40165, Sept. 2, 1975; CGD 77-140, 54 FR 40613, Oct. 2, 1989; CGD 88-032, 56 FR 35822, July 29, 1991; CGD 83-043, 60 FR 24775, May 10, 1995; CGD 95-072, 60 FR 50462, Sept. 29, 1995; CGD 96-041, 61 FR 50728, Sept. 27, 1996; CGD 95-028, 62 FR 51201, Sept. 30, 1997]

Subpart 56.65—Fabrication, Assembly and Erection

§ 56.65-1 General (replaces 127 through 135.4).

(a) The requirements for fabrication, assembly and erection in subparts 56.70 through 56.90 shall apply in lieu of 127 through 135.4 of ANSI-B31.1. Those paragraphs reproduced are so noted.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9978, June 17, 1970]

Subpart 56.70—Welding

§ 56.70-1 General.

(a) The following generally applies to all types of welding, such as stud welding, casting repair welding and all processes of fabrication welding. Where the detailed requirements are not appropriate to a particular process, alternatives must be approved by the Marine Safety Center.

[CGD 77-140, 54 FR 40614, Oct. 2, 1989]

§ 56.70-3 Limitations.

Backing rings. Backing strips used at longitudinal welded joints must be removed.

[CGD 73-254, 40 FR 40165, Sept. 2, 1975]

§ 56.70-5 Material.

(a) *Filler metal.* All filler metal, including consumable insert material, must comply with the requirements of section IX, ASME Boiler and Pressure Vessel Code and § 57.02-4 of this subchapter.

(b) *Backing rings.* When metallic backing rings are used they shall be made from material of weldable quality compatible with the base metal, whether subsequently removed or not.

When nonmetallic backing rings are used they shall be of material which does not deleteriously affect either base or weld metal, and shall be removed after welding is completed. Backing rings may be of the consumable insert type, removable ceramic type, of solid or split band type. A ferrous backing ring which becomes a permanent part of the weld shall not exceed 0.05 percent sulphur. If two abutting surfaces are to be welded to a third member used as a backing ring and one or two of the three members are ferritic and the other member or members are austenitic, the satisfactory use of such materials shall be determined by procedure qualifications.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 73-254, 40 FR 40165, Sept. 2, 1975]

§ 56.70-10 Preparation (modifies 127.3).

(a) *Butt welds (reproduces 127.3.1)*—(1) *End preparation.* (i) Oxygen or arc cutting is acceptable only if the cut is reasonably smooth and true, and all slag is cleaned from the flame cut surfaces. Discoloration which may remain on the flame cut surface is not considered to be detrimental oxidation.

(ii) Butt-welding end preparation dimensions contained in ANSI-B16.25 or any other end preparation which meets the procedure qualification requirements are acceptable.

(iii) If piping component ends are bored, such boring shall not result in the finished wall thickness after welding being less than the minimum design thickness. Where necessary, weld metal of the appropriate analysis may be deposited on the inside or outside of the piping component to provide sufficient material for machining to insure satisfactory fitting of rings.

(iv) If the piping component ends are upset they may be bored to allow for a completely recessed backing ring, provided the remaining net thickness of the finished ends is not less than the minimum design thickness.

(2) *Cleaning.* Surfaces for welding shall be clean and shall be free from paint, oil, rust, scale, or other material which is detrimental to welding.

(3) *Alignment.* The inside diameters of piping components to be joined must be aligned as accurately as practicable